We claim:

1. A method for making a magnetic disk comprising the steps of:

depositing a first carbon layer on said disk, said first carbon layer comprising predominantly SP3 carbon; and

depositing a second carbon layer on said disk, said second carbon layer comprising about 60% or less SP3 carbon, the SP3 content of the second carbon layer being less than the SP3 content of the first carbon layer.

2. Method of claim 1 wherein the second carbon layer comprises less than about 50% SP3 carbon.

3. Method of claim 2 wherein the second carbon layer comprises more than about 30% SP3 carbon.

4. Method of claim 1 wherein said second carbon layer has a thickness less than or equal to about 1 nm.

5. Method of claim 1 wherein said second carbon layer is between 0.1 and 1 nm thick.

6. Method of claim 1 further comprising a lubricant layer.

7. Method of claim 1 wherein the second carbon layer is formed by sputtering and the first carbon layer is formed by CVD, PECVD, IBD or cathodic arc deposition.

8. Method of claim 1 wherein the first and second carbon layers are formed by sputtering.

9. Method of claim 8 wherein said depositing of said first carbon layer comprises: applying a voltage to a sputtering target, said sputtering target comprising carbon, said voltage being applied by a power supply in the form of pulses, said pulses comprising at least a first portion and a second portion, the voltage applied during said second portion being more negative than that applied during said first portion, wherein a first sub-portion of said second portion is more negative than a second sub-portion of said second portion.

10. A magnetic disk comprising:

a substrate;

a magnetic layer formed on said substrate;

a first carbon layer formed on said magnetic layer, said first carbon layer comprising predominantly SP3 carbon; and

a second carbon layer formed on said first carbon layer, said second carbon layer comprising about 60% or less SP3 carbon, the SP3 content of said second carbon layer being less than the SP3 content of the first carbon layer.

11. Disk of claim 10 wherein the second carbon layer comprises less than 50% SP3 carbon.

12. Disk of claim 10 wherein said wherein said second carbon layer is a flash carbon layer.

13. Disk of claim 13 wherein said second carbon layer is between 0.1 and 1.0 nm thick.

14. A method for modifying a manufacturing process, said manufacturing process comprising providing a carbon-based protective overcoat on a magnetic disk using a set of parameters, said method comprising modifying said process such that instead of providing said carbon-based protective overcoat on said magnetic disk using said set of parameters, the following acts are performed:

depositing a first carbon layer on said magnetic disk, said first carbon layer having an SP3 content of at least about 70%; and

depositing a second carbon layer using substantially said set of parameters, said second carbon layer being less than or equal to about 1.0 nm thick..

15. Method of claim 14 wherein said first carbon layer has a thickness between 2 and 5 nm.

16. Method of claim 14 wherein said depositing of said second carbon layer comprises sputtering said second carbon layer in a sputtering chamber and said parameters include the composition and pressure of the gas in the sputtering chamber.

17. Method of claim 14 wherein said parameters include the substrate temperature and bias voltage.

18. Method of claim 14 wherein said second carbon layer has a thickness greater than or equal to about 0.1 nm.

19. Method of claim 14 wherein said first carbon layer comprises at least one material selected from the group consisting of nitrogen and hydrogen.

20. Method of claim 14 wherein said second carbon layer comprises at least one material selected from the group consisting of nitrogen and hydrogen.

21. Method of claim 14 wherein said second carbon layer comprises less than 60% SP3 carbon.

22 A method for modifying a manufacturing process, said manufacturing process comprising providing a carbon-based protective overcoat on a magnetic disk using a set of parameters, said method comprising modifying said process such that instead of

providing said carbon-based protective overcoat on said magnetic disk using said set of parameters, the following acts are performed:

depositing a first carbon layer on said magnetic disk, said first carbon layer comprising predominantly SP3 carbon; and

depositing a flash layer of carbon using said set of parameters.

23. Method of claim 22 wherein said first carbon layer comprises about 70% or more SP3 carbon.

24. Method of claim 22 wherein said flash layer has a thickness less than about 1 nm.

25. Method of claim 22 wherein said flash layer comprises at least one material selected from the group consisting of hydrogen and nitrogen.

26. Method of claim 22 wherein said first carbon layer comprises at least one material selected from the group consisting of hydrogen and nitrogen.

27 A method for modifying a manufacturing process, said manufacturing process comprising providing a carbon-based protective overcoat on a magnetic disk, said method comprising modifying said process such that instead of providing said carbon-based protective overcoat on said magnetic disk, the following acts are performed:

depositing a first carbon layer on said magnetic disk, said first carbon layer comprising predominantly SP3 carbon; and

depositing a second carbon layer that cooperates with lubricant with substantially the same effectiveness as said protective overcoat.

28. Method of claim 27 wherein said first carbon layer has an SP3 content of about 70% or more.

29. Method of claim 27 wherein said second layer is less than about 1 nm thick.

30. Method of claim 27 wherein said second carbon layer has substantially the same SP3 content as said protective overcoat.

31. Method of claim 27 wherein said second carbon layer has substantially the same density and refractive index as said protective overcoat.

32. Method of claim 27 wherein said second carbon layer has substantially the same surface energy as said protective overcoat.

33. Method of claim 27 wherein said second carbon layer has substantially the same chemical properties as said protective overcoat.

34. Method of claim 27 wherein said second carbon layer comprises at least one material selected from the group consisting of hydrogen and nitrogen.

35. Method of claim 27 wherein said first carbon layer comprises at least one material selected from the group consisting of hydrogen and nitrogen.

36. Method of claim 27 wherein said second carbon layer is a flash layer.

37. Method of claim 27 wherein without said second carbon layer, the cooperation between said lubricant layer on said first carbon layer would be such as to tend to cause said disk to fail a glide height test, and wherein said second carbon layer permits said magnetic disk to pass said glide height test.

38. Method of claim 27 wherein said glide height test tests said disk at a height of about 1 microinch.

39. Method of claim 27 wherein said first carbon layer has a greater SP3 content than said second carbon layer.

40 A method for modifying a manufacturing process, said manufacturing process comprising providing a carbon-based protective overcoat on a magnetic disk, said carbon-based overcoat comprising one component of a head-disk interface, said method comprising modifying said process such that instead of providing said carbon-based protective overcoat on said magnetic disk, the following acts are performed:

depositing a first carbon layer on said magnetic disk, said first carbon layer comprising predominantly SP3 carbon; and

depositing a second carbon layer that cooperates with at least one second component of said head-disk interface with substantially the same effectiveness as said protective overcoat.

41. The method as described in claim 39 wherein said second component of said head-disk interface comprises one or more of: a lubricant applied above said second carbon layer, a texture formed on said disk; and a slider having a read element thereon.